

**NDCAP FEDERAL NUCLEAR WASTE POLICY
COMMITTEE ('the Committee') UPDATE FOR
20 SEPTEMBER 2021 FULL VERMONT NDCAP MEETING**

BACKGROUND ON COMMITTEE FORMATION, MISSION AND FUNCTIONING

VT NDCAP's Federal Nuclear Waste Policy Committee was created in December 2020 in order for the Panel to learn more about US national spent fuel storage and disposal issues and to potentially develop recommendations ('advisory opinions') on US nuclear waste policies important to Vermont for the full Panel to consider. Its creation was spurred by a 2015 NDCAP letter signed by the former chair on behalf of the panel advocating a change in current US policy supporting development of Consolidated Interim Spent Fuel Storage Facilities (CISFs). The Panel approved a motion (8-1 vote with 4 abstentions) to withdraw that support and state that it currently has no position on CISFs or any changes to current US nuclear waste law. A 12 to 1 vote followed to create a Federal Nuclear Waste Policy Committee to study national spent fuel storage and disposal concerns. Lissa Weinmann agreed to Chair the committee.

Current committee members are Maddy Arms, Corey Daniels, Marvin Resnikoff, Anthony Leshinskie, who as State Nuclear Engineer administers the Committee and Weinmann. Other NDCAP panel members have attended from time to time and Chair Emily Davis keeps informed and attends as able.

The committee has met monthly since January, 2021, generally the third Monday of each month. A strict one hour timeframe is respected. Much reading is necessary. Anthony Leshinskie and Michele LaPerle of the Vermont Public Service Department have created and manage a Committee page on the NDCAP site with reading materials submitted by Committee members and the public. They also field public comments from the PSD-NDCAP@vermont.gov email. The Committee webpage is available at: <https://publicservice.vermont.gov/content/vt-ndcap-federal-nuclear-waste-policy>.

PUBLIC PARTICIPATION

Committee meetings are warned a week in advance for Microsoft teams, and as of July 2021 open meeting requirements require physical meeting locations. The committee convenes at 118 Elliot at 118 Elliot Street in Brattleboro. The space is donated by Committee member Weinmann as per PSD legal approval.

The Committee's work has attracted national attention including federal entities, industry watchers and advocates from other nuclear host communities. Representatives from the organizations listed in Appendix A have joined at least one of the Committee's meetings conducted during 2021.

Below is a brief rundown of topics explored, guests received, developments and questions that need more exploration, as well as an overview of examples of potential Advisory Opinions the committee may discuss.

OVERVIEW OF TOPICS AND GUESTS

One of our first questions was whether the state already had a functional ‘position’ or policy on nuclear waste disposal matters apart from the 2015 letter. We learned the Department of Public Service and PUC were listed as members of the national Nuclear Waste Strategy Coalition (that group’s stance is explored below) which used to be headed by Sarah Hoffman, a VT Commissioner of Public Utilities. PSD Commissioner June Tierney said the Dept’s membership would be rescinded now that Hoffman no longer leads that effort. Hoffman had agreed to address the committee but has not yet solidified a date.

The committee also investigated our federal delegations’ stance on CISF and nuclear waste policy in general, reviewing legislation and getting updates from staff. It also reached out directly to Scott State and Waste Control Specialists (WCS, a partner in the proposed Texas CISF) for clarification on the companies’ plans and perspectives but he declined.

Here are recaps of the guests and discussions we’ve had so far:

January 20, 2021: The first meeting focused on administrative and procedural questions, but included a discussion of whether committee members had an existing position and what they seek to get out of the panel. Here’s a sampling of input from that discussion:

- Citizen Appointee and Local State Representative for Vernon Sara Coffey (who later left committee due to time constraints) wanted to understand the layers of responsibility and where the financial responsibilities lie in regards to VY’s spent fuel as well as more info on how large the final VY site will be and how development can occur alongside an ISFSI.
- Corey Daniels, 24 year VY veteran and senior manager of the ISFSI at Northstar, explained that he has no direct insights into how Northstar’s sister corporation, Waste Control Specialists in Texas -- where all lower level VY waste has been going and partner in the proposed consolidated interim storage facility for high level nuclear waste alongside the current facility. Corey holds that the federal government is in breach of contract. He supports the Blue Ribbon Commission findings that a Central Interim Storage Facility should be explored as a potential ‘interim’ solution. He would like to see a geologic facility where radioactive spent fuel can be retrieved and reprocessed, would like to see the canisters leave the VT site and the area redeveloped as per the ‘original deal’ but feels NIMBY will likely make it impossible to site waste anywhere. Corey offered good reading material, urged the Committee to remain focused on facts and seek a ‘success path’ rather than just being against proposals.
- Maddy Arms of Vernon said she felt reasonably assured the waste is monitored and in a safe place. She said the Vernon Selectboard, the planning commission and townspeople in general feel safe and believe the ISFSI is being well maintained for now. She said they are resigned to the ISFSI remaining here for a long time and that redevelopment planning includes the site remaining a SNF / nuclear waste repository. She said the federal government has dropped the ball, that it has the resources but lacks the will to tackle the issue. She hopes technology may eventually offer a way to further use the spent fuel and end up with less of it.

- Marvin Resnikoff, who has worked as a consultant to the state of Nevada, strongly held that Yucca Mountain in Nevada is a bad 'permanent repository' and that other sites must be explored starting now. He also expressed his opinion that all stakeholders - local, state and federal - must talk to each other to find consensus. He reminded the committee of how Vermont would react if it were deemed appropriate as a federal site for disposal or storage of the nation's radioactive waste.

February 22, 2021: Further discussion of mission and suggested future speakers and process of submitting reading material to committee for its webpage. Arms expressed the opinion that the federal government should support the community's role in caring for the waste it has refused to take away. Leshinskie recommended we get a speaker from the tribal government, possibly the Waste Isolation Pilot Project (WIPP) in New Mexico on these issues. Resnikoff suggested NM oil and gas stakeholders be invited to share their opinions on CISF.

March 15, 2021: Ian Zabarte, principal man of the Western Band of the Shoshone Nation, appointed in 2018 to the NRC's Yucca licensing review panel, called in from Las Vegas to share the native nation's strong views against the use of Yucca Mountain as 'unconstitutional and illegal.' He cited tribal rights to the land in the 1863 Ruby Valley Treaty reflected also in acts establishing the state of Nevada. He also pointed to the #4 NRC safety evaluation report which underscores that DOE has not demonstrated ownership of the land. Zabarte described how the Native Community Action Council actively organizes to oppose Yucca and what it views as nuclear energy's marriage with nuclear weapons development. He said they will never stop fighting against this proposal.

The committee also discussed how to approach the policy problem if the intention is to have NDCAP and potentially the state weigh-in on the future of VY spent fuel. Weinmann suggested the focus of the Committee's study be centered on whether or not CISF is in Vermont's interest. Daniels expressed that companies like WCS/Orano may not want to participate in committee discussions because they may feel that opinions are against the facility.

April 19, 2021: Discussed **Doris Matsui (D, CA)** reintroduction of H.R. 2097, the Storage and Transportation of Residual and Excess (STORE) Nuclear Fuel Act. This bill creates a legislative framework to develop a consolidated interim storage program at the Department of Energy. It allows for both active and decommissioned nuclear power plants, with priority given to decommissioned plants, to move spent nuclear fuel to interim storage facilities. This legislation is driven by the need to move the ocean-front casks near the San Onofre decommissioned nuclear plant.

May 17, 2021: Mark Holt, nuclear energy analyst from Congressional Research Service, the federal agency that is the research arm of the Congress, presented and took questions. He reminded us that 10 years have passed with no new funding for Yucca and that this lack of appropriations to finish the process, by both Rs and Ds, has effectively arrested action. He pointed out that Obama's Blue Ribbon Commission proposed 'consent based siting' (and Yucca has no consent) but did not recommend changing current law designating Yucca, so sidestepped the issue. The NRC issued all the reports, gave Yucca the go-ahead, but funding for the adjudication of the atomic licensing board was cut off, effectively keeping the whole process in limbo.

Holt said privately owned and funded CISFs could potentially be developed outside of the statutory requirements of the law which back in the 80s only foresaw a federal site. NRC licensed PFS in Utah in 2006 as the first potential CISF site, but the state did not issue permits and PFS terminated its license in 2012. Interim Storage Partners (ICS), WCS and Orano USA (a French subsidiary formerly AREVA) applied to NRC for a facility near current WCS operation in Andrews County TX near NM border, but it is also roundly opposed. *(Note: State passed law in Sept. 2021 outlawing any SNF facility. The Governor of Texas also opposed it. NRC subsequently has issued a license for the facility).* Holtec in Eddy Lea County in NM is also seeking a license but it is also heavily opposed locally with the NM Governor actually suing the NRC. Holt said there is a legal question about whether DOE could contract with a private facility to satisfy its obligation to take waste. He speculated that the private facility could take waste without DOE involvement and fund the work not from the Nuclear Waste Fund but from the the Judgment Fund which pays all judgments against the US, not just nuclear, and is not appropriated by Congress. Holt said the main obstacle to movement on citing a repository of any kind, interim or permanent, is the federal system of the US -- no states want the waste. He said the NM Waste Isolation Pilot Project (WIPP), meant to showcase a working deep geologic repository but for a limited amount of a specific variety of defense waste, was built after much controversy, with state approval. He said, aside from WIPP, in no case has a state opposition been successfully overcome. Localities are sometimes interested but then the state overall blocked it.

Holt said the NRC ruling that continued storage is safe at original host sites has diminished potential public outcry, but that it is possible that as plants shut down public pressure and congressional interest will increase.

He spoke about a new NY law that allows local taxation of ISFSI / SNF. This could help localities and alleviate pressure for waste to be taken away. The NY State legislature gave localities the authority to do it.

He said new DOE head Jennifer Granholm said consent based siting process could be revived and that the Nuclear Waste Technical Review Board supports creating a consolidated government agency responsibility for waste management nationally. The Blue Ribbon Commission supported this 'new agency' concept, although it recommended it be independent from DOE. Holt said a nuclear industry-led letter called for a new agency within DOE on nuclear waste. He said an Office of Civilian Nuclear Waste Management still exists, but its statutory responsibilities were folded into DOE. He said it is seen as a Yucca Mountain focused entity, so feels it is unlikely it would be revived. The new office is an idea that is in play, but so far there have been no bills to reorganize the nation's nuclear waste structures. A reorganization would put more attention on the problem he thinks, but what is ultimately appropriated will tell us how much attention the administration will pay to this issue.

Holt said FY 2021 DOE was funded \$20 million for the Nuclear Waste Disposal account, marking the first time since 2010 that account has been revived for integrated waste management to prepare to restart a consent based process. There were also funds for advanced reactor research, which is significant because reprocessing and recycling could possibly create a different type of nuclear waste that can be reused. He said there is lots of interest in advanced reactors as a potential waste solution.

He said for the most part bills dealing with nuclear waste are introduced and reintroduced year after year with no real movement. He said the Energy Act of 2020 in section Z reauthorized more nuclear energy programs, including for small modular reactors, used nuclear fuel research, and a CISF with specific authorizations for several years.

Holt responded to questions about what exactly is consent based siting: is it local, state, native tribe? Does consent last forever? Can change of administration over time revoke consent? Is it an inviolable contract? He said one must have consent through the whole process. States have lots of ways to subvert it.

Holt said he had not seen much emphasis on HOSS - Hardened Onsite Storage except for Rep. Markey's bills requiring expedited transfer from pools to casks asap, not really hardened.

Holt said the VY Nuclear Waste Policy committee had a role to play that made sense growing out of VT state's legislative activity that prompted its federal delegation to push for changes at NRC. He said there has been a lot of effort to get stranded communities together. He thought our findings would be of interest to a willing group of legislators, the Admin and DOE. He said the Committee could participate in meetings, sign letters and get involved in hearings as they move forward. In Congress Committee chairs set the agenda and can name witnesses. He stressed that serious groups like the committee are needed to comment on lawsuits, NRC regulatory actions, etc.

He discussed Holtec getting support from the Oyster Creek community for its CISF plan in NM and described his thoughts on how a private CISF mechanism could work: A company can take over ownership of a plant and the liability for spent fuel so it becomes the standard contract party, then it takes its own SNF from own plant to another (apparently some transfers of this type, from one company's maxed-out spent fuel pool to another facility it owns with more room, have occurred). Then the company sues DOE for the costs and keeps getting reimbursed from the judgment fund, sidestepping existing laws. Host community support helps.

He explained that under the 1982 Nuclear Waste Policy Act, DOE takes title to the waste once it leaves the plant site. DOE is subject to NRC security requirements and routing requirements. DOT is responsible for transport and DOE is responsible for security along the way. DOE would likely be contracting for many services along the way. In the private companies' plan, the DOE never takes title to the waste. The companies could store it forever and keep getting payment from the judgment fund, essentially performing interim storage without any plan for a permanent repository.

He fielded questions about whether a private company could transport waste under such a mechanism. The National Transportation Stakeholder Forum -- DOE's interface with states on transportation issues -- fields local first responder funding requests. Private companies could set something up like that, possibly provide a grant for private transport of SNF. The utilities would put rail cars on trains to ship waste to other plants that had room, but there would be a cost and risk to communities along the route. He said these issues may be raised in Congress. He estimated that if a utility was able to ship in such a way that the implementation of a transport plan would likely take at least 7 years considering all the technical, legal and political issues. There is the constitutional authority to do it, but states have their own rules and ways to fight it off.

June 2021 Meeting: Discussed need for physical meeting space due to return to VT state requirements. Discussed a Congressional Letter calling on Marcy Kaptur and Mike Simpson to back a DOE CISF facility (doc on committee page). We discussed whether the town of Vernon had a policy position on nuclear waste; Maddie Arms agreed to bring it up with the town. Schyler Gould reported on a conversation he had with Scott State - that WCS has a minority position in the Interim Storage Partners effort in TX and that even if ISP gains a license from NRC, it would still be a long and unsure road.

July 2021 Meeting: First meeting physically in 118 Elliot space. The Dept. of Energy's (DOE's) Erica Bickford, Program Manager in the Office of Integrated Waste Management, shed much light on prospects for the CISF process and developments under the Biden administration, less light on any fresh thinking on solving the problem of a permanent geologic facility.

DOE endorsed the Blue Ribbon Commission's 2012 recommendations in 2013 and is gearing up to engage in a renewed round of 'consent based' siting for CISF and potentially an alternative deep geologic repository. She said DOE Secretary Granholm has endorsed the BRC's findings and consent based siting. Bickford said Dr. Katie (Kathryn) Huff, new Principal Deputy Assistant Secretary and Acting Assistant Secretary in the Office of Nuclear Energy (NE), plays a leadership role in promoting new nuclear research and development. Huff says (on the DOE site) that such plans cannot happen until a solution is found for SNF.

Bickford said draft legislation was introduced in 2013 and 14 and in 2015 DOE launched a consent based siting initiative around the country. A feedback document was issued in 2017, but by then the change of presidency discontinued that initiative and the DOE effort entered a form of limbo. Trump initially wanted to return to Yucca and proceed on a CISF but there was no support from Congress.

Biden is now picking up where they left off from in 2017 aided by support in Congress. In FY '21 Congress appropriated funds for DOE to conduct work citing a CISF consistent with NWPA using a consent based approach. She said it was the first time in 10 years we got clear direction for a facility. They are reviewing comments gotten in 2017 and creating a new website to serve as a public resource, looking at various issues and facilities and regulatory questions and hoping to get public feedback. DOE understands that it needs new legislation to continue this progress. The FY '22 budget includes developing a functioning waste management system, dealing with regulatory and design concepts, updating data on inventories of SNF, continuing transportation planning with various working groups, finalizing specialty rail cars, scoping out sites, engaging with states etc.

Questions: Marvin: slideshow on development of rail cars -VY has Holtec 100 -- which one of the specialty Atlas rail cars will be required and when will it be approved?

Bickford said the Assn of American Railroads determines specifications. It has a number of cars in development - 12 axle rail cars for transport and the 8 axle Fortis. DOE wants to move forward on fabrication. Which one is used will be determined by total loaded weight, in general Atlas designed to carry all 17 cask designs, to envelope all the casks 80 tons to 240 tons. Fortis developed because, since you pay by weight, lighter loads on Atlas and might have to add ballast, so Fortis can be used for smaller

packages. Buffer rail cars go between locomotives and cars with SNF, buffer cars, rail escort vehicles designed by the US Navy for their program. ATLAS close to completing testing, BUFFER, FORTIS, completed design and now needs to be tested. Hope to have all the railcars to be approved by 2023 and Fortis by 2025-26.

DOE is also investigating track work, has that been done at VY?

Bickford said DOE did a site visit to VY in 2017, looked at rail spur and lines, met with the NE Central Railroad, took the train down to Palmer MA (CSX Class One rail line that connects with national network) where waste would go before being transferred. She said they have not done a full route clearance but didn't see anything that looked too problematic to transport out of the VY site.

Bickford said proposed private interim facilities are completely outside of DOE connection or control and it has done no work with them or their infrastructure. DOE envisions a pilot facility funded in FY 21 when congress approved 'a federal interim storage facility.' She said the law calls for a pilot MRS--monitored retrievable storage -- which is like CISF in terms of NWPA constraints, but not in terms of size and linkage to Yucca. The MRS framework can move forward but has a cap at 500 metric tons, a very small amount that can be stored and is impractical, there is much more SNF now than when law was written. At minimum, the MRS cannot proceed until 'Yucca Mountain' has a 'license to construct' which is challenging since there is no political will to move Yucca.

She said DOE is drawing on WIPP experience where NM approved the defense-only geologic waste facility but with EPA as their regulator not NRC.

DOE has not gotten direction from Congress to do anything with Yucca. She said the ball is in Congress' court whether it wants to remove it from law. There were proposals to move forward with it from both Rs and Ds, but there is virtually no political will to do anything with it. It continues to be on hold, and may or may not be indefinitely. Until removed from law it is technically still 'out there'.

DOE will move forward on its own CISF without a permanent repository. It recognizes that asking a community to be 'interim' is harder without having a permanent repository. As DOE develops a national plan it needs to develop the 'disposal' element, but no substantive progress can be made until DOE is authorized to do so by Congress. A DOE site would be required to have NRC approval as well.

Phone call question: On July 15, 2021 Andrews County unanimously rejected a plan for CISF there, so what constitutes consent?

Bickford said the question remains and has long been the challenge. DOE has had local communities interested but states or counties reject it, so we are not specific about what consent actually is at this point. She said DOE includes tribes in this process since they are sovereign nations.

Bickford said the companies pursuing licenses for CISFs think there is a way they can proceed without any action from Congress. They believe Congress is not needed for transferring SNF from one ISFSI to another they own. DOE needs Congress' approval. Private facilities believe they can move forward

independently, but how they make money doing it is the question. If a company owns the waste, no title is exchanged.

Bickford could not speculate on how their transport would work. DOE does not own SNF. The law says that at the point when SNF leaves a facility boundary, DOE takes title. Companies have moved SNF from pool to pool, which could be considered a comparable activity albeit transferring to a CISO is at a much larger scale. Approvals would then be up to DOT and NRC regulations. Department of Homeland Security, barge Coast Guard may all be part of transport. Packages used to transport are NRC approved, rail sets regulation. The Assn of American Railroad predates the federal railroad administration and movement is based on that organization's standards.

Bickford said creating an integrated nuclear waste management system nationally would cost around the order of \$100 billion, and transport would likely cost about 10% -- based on one or two CISO and a permanent repository.

Bickford said DOE has not looked at the economic impact of different scenarios for waste, and has never looked at hardened onsite storage (HOSS) because law's intention was always for disposal. It is likely more expensive to transport fuel twice rather than once, but depends on where it is transported from. The greater cost is the \$2 million a day coming out from the judgment fund from all the breach of contract lawsuits, she said. The Government taking ownership of fuel and fulfilling contracts would reduce that cost.

What if DOE takes the title to SNF and compensates the community?

Bickford said aggregation creates cost efficiency. Right now 40 different companies are seeking damages from the US gov each year. If you consolidated waste, she said, you would reduce capital and security costs. Keeping SNF at host facilities would require DOE to be convinced there will be a benefit to taxpayers.

When asked about timing for plans, Bickford said a 'ballpark estimate' to get to CISO is 10 years, 2 years construction, 2 years licensing, rest is negotiated with the community. Perm Repository ballpark is at least 30 years. DOE isn't currently working toward finding a repository, but that is still the end space, and sooner or later it needs to move forward on that. Bickford said DOE needs to be able to tell CISO communities what they are signing up for in order to get consent.

DOE started to look for a site for a CISO facility to see if anyone raised their hand, trying to engage communities in exchange for some funding to start taking a look at it. DOE is currently not going out to call for folks to sign-up to be a CISO, but it is seeking input for forward steps.

August 2021: Meeting focused on current Congressional activity with Guests Haley Pero and Thea Wurzburg. Resulted in a Brattleboro Reformer article:

https://www.reformer.com/local-news/staffers-see-little-interest-or-action-on-nuclear-waste-issues/article_6aee6250-043e-11ec-9714-e38d784c3185.html

In the Consolidated Appropriations Act, 2021 (Public Law 116-260; U.S. Congress 2020), DOE was given \$27.5 million appropriated for nuclear waste disposal activities (including funding related to interim storage activities) as well as the \$3.6 million to fund the work of the Nuclear Waste Technical Review Board, representing the most significant appropriation in addressing the nation's spent fuel storage challenge in a decade.

A House Nuclear Waste Caucus has been created but no details have been forthcoming about its goals or meeting schedule. Rep. Welch is not a part of that caucus at this time.

ISSUES/QUESTIONS/POTENTIAL POLICY RECOMMENDATIONS

YUCCA MOUNTAIN

The Committee explored whether NDCAP can support any 'interim' consolidated storage facility with no progress nationally on the 'permanent' geologic depository called for in the Reagan-era 1982 Nuclear Waste Policy Act (NWSA) which initially called for there to be two repositories on either side of the country, but designated only Yucca Mountain in the 1986 amendment to NWSA absent any consent. That same law states DOE will have a facility open by Jan. 20, 1998 to receive waste back from host communities, which after 23 years has not happened.

The entire state of Nevada opposes Yucca and has since it was first proposed in 1987. Geologist and former NRC Chair Allison MacFarlane has written in 'Uncertainty Underground' (MIT Press, 2006) about the scientific and technical issues that remain unresolved at Yucca, meaning the problem with Yucca is not just political. A 2004 DC Court of Appeals found Yucca could not comply with the minimum 10,000 year assurance of safety, which begs the question what facility could?

It should be noted that if the Yucca Mountain Project proceeds, the current inventory of SNF already exceeds the statutory capacity limit of 70,000 MTHM for the Yucca Mountain repository, implying the need for additional repository capacity at Yucca Mountain or elsewhere to accommodate current and future generated SNF.

NUCLEAR WASTE FUND

A key requirement for DOE to be able to make meaningful progress toward transporting and disposing of SNF and HLW is maintaining a sufficient and reliable source of funding for planning and execution of the nuclear waste management program. The Nuclear Waste Fund was established by the NWSA and was designed to grow through income from an assessment of \$0.001/kWh to be paid by the nuclear utilities for electricity generated by nuclear power. Appropriations from the fund are controlled by Congress.

In 2013, a federal court decision suspended the collection of fees for the Nuclear Waste Fund by DOE "until such a time as either the secretary chooses to comply with the NWSA as it is currently written, or until Congress enacts an alternative waste management plan" (Dolley and Hiruo 2013). Interest continues to add to the fund. In fiscal 2019, interest credited to the fund totaled \$1.7 billion, bringing the fund's unspent balance to \$40.9 billion.

According to the latest Nuclear Waste Fund Audit Report by the Department of Energy Inspector General (DOE-OIG-21-02) payouts to corporations and quasi-gov owners of SNF will total \$8.6 billion through September 30, 2020 and that the remaining additional liabilities will total \$30.6 billion ("assumes activities on a DOE Facility will begin by FY 23"). These funds are paid out of a permanent appropriations account known as the Judgment Fund outside the appropriations process.

The Nuclear Waste Strategy Coalition, dominated as it is by utilities, is focused heavily on use of those funds. According to its Executive Director: "We want to follow current law. Customers already paid (over \$11 billion) in to get Yucca done and if it passed muster and was opened it should take that waste. The government has completely dropped the ball but has customers' money. Our state members are concerned that customers are not getting what they already paid for."

BLUE RIBBON COMMISSION (2012) AND U.S. NUCLEAR WASTE TECHNICAL REVIEW BOARD (2021) RECOMMENDATION

Committee members were assigned to read the Obama administration's 2012 Blue Ribbon Commission, a bipartisan group chaired by Lee Hamilton and Brent Scowcroft, recommendations which re-iterated the long-held decision by the scientific community that a deep geologic repository is the best option for permanent disposal of nuclear waste and supported a 'pilot' CISF as well as formation of an independent executive agency to manage nuclear waste. The BRC did not consider siting or the appropriateness of Yucca Mountain or any other location as a potential site for the interim storage of spent nuclear fuel or disposal of high level waste and did not take a position on the Administration's request to withdraw the Yucca Mountain license application.

The eight key recommendations of the BRC follow:

1. A new, consent-based approach to siting future nuclear waste management facilities.
2. A new organization dedicated solely to implementing the waste management program and empowered with the authority and resources to succeed.
3. Access to the funds nuclear utility ratepayers are providing for the purpose of nuclear waste management.
4. Prompt efforts to develop one or more geologic disposal facilities.
5. Prompt efforts to develop one or more consolidated storage facilities.
6. Prompt efforts to prepare for the eventual large-scale transport of spent nuclear fuel and high-level waste to consolidated storage and disposal facilities when such facilities become available.
7. Support for continued U.S. innovation in nuclear energy technology and for workforce development.
8. Active U.S. leadership in international efforts to address safety, waste management, non-proliferation, and security concerns.

One important recommendation of the BRC, the US Nuclear Waste Technical Review Board and the Nuclear Waste Strategy Coalition, as well as the San Onofre host community coalition, is establishment of a new single-purpose organization, either as an independent entity outside or within DOE, with the mission of safe management and final disposition of SNF in the US. BRC held that an independent agency would ostensibly preserve the personnel and capabilities needed to successfully address the

multi-decade SNF management challenges and be stable, properly staffed, securely funded, and insulated from short-term political changes.

The US Nuclear Waste Technical Review Board published in April 2021 ‘Six Overarching Recommendations for How to Move the Nation’s Nuclear Waste Management Program Forward’ which focused mainly on how DOE should be taking charge of integrating all the different entities complicating progress, so it appears they advocate for an agency within DOE.

The BRC also laid out legislative changes that would be required for its recommendations to be realized. Below is text from a box in the BRC report outlining such changes - bold added by Committee:

*Fully implementing the Commission’s recommendations will require several changes to the Nuclear Waste Policy Act or other legislation: Establishing a new facility siting process – The NWPA, as amended in 1987, now provides only for the evaluation and licensing of a single repository site at Yucca Mountain, Nevada. **The Act should be amended to authorize a new consent-based process to be used for selecting and evaluating sites and licensing consolidated storage and disposal facilities in the future, similar to the process established in the expired Nuclear Waste Negotiator provisions of the Act (but under new organizational leadership, as described below).***

Authorizing consolidated interim storage facilities – The NWPA allows the government to construct one consolidated storage facility with limited capacity (Committee note: 5000 metric tons allowed, but DOE says currently there is at least 83,000 metric tons of SNF) but only after construction of a nuclear waste repository has been licensed. One or more consolidated storage facilities should be established, independent of the schedule for opening a repository. The Act should be modified to allow for a consent-based process to site, license, and construct multiple storage facilities with adequate capacity when needed and to clarify that nuclear waste fee payments can be used for this purpose.

*Broadening support to jurisdictions affected by transportation – The NWPA provides funding and technical assistance for training public safety officials to states and tribes whose jurisdictions would be traversed by shipments of spent fuel to a storage or disposal facility. **The Act should be amended to give the waste management organization the broader authorities given to DOE in the WIPP Land Withdrawal Act that supported the successful large-scale transport of transuranic waste to WIPP** (including a public information program, support for the acquisition of equipment to respond to transportation incidents, and broad assistance for other waste-related transportation safety programs).*

*Establishing a new waste management organization – Responsibility for implementing the nation’s program for managing spent nuclear fuel and high-level radioactive wastes is currently assigned to the U.S. Department of Energy. **Legislation will be needed to (1) move this responsibility to a new, independent, government-chartered corporation focused solely on carrying out that program and (2) establish the appropriate oversight mechanisms.***

Ensuring access to dedicated funding – Current federal budget rules and laws make it impossible for the nuclear waste program to have assured access to the fees being collected from nuclear utilities and ratepayers to finance the commercial share of the waste program’s expenses (the collection of these fees was halted by a court order in 2013). We have recommended a partial remedy that should be implemented promptly by the Administration, working with the relevant congressional committees and the Congressional Budget Office. A long-term remedy requires legislation to provide access to the Nuclear Waste Fund and fees independent of the annual appropriations process but subject to rigorous independent financial and managerial oversight.

TRANSPORTATION ISSUES

As State Nuclear Engineer, Anthony Leshinski represents the State of Vermont on the Northeast Regional High Level Radioactive Waste Transportation Task Force sponsored by the Council of State Governments. The Task Force participates in the National Transportation Stakeholders Forum (NTSF), which is the US Department of Energy's (DOE's) mechanism for consulting with State and Tribal Governments on radioactive waste transportation issues. NTSF's high level radioactive waste / spent nuclear fuel transportation planning is limited to some extent in that it currently cannot assume specific destinations or time tables for spent fuel shipments. DOE's most recent estimates indicate that once a disposal facility is established, approximately 7 to 15 years will be necessary to implement specific transportation plans.

UNDERSTANDING THE CURRENT DUAL PUBLIC (DOE) / PRIVATE (HOLTEC/ORANO-WCS) CISF TRACKS

We learned from DOE that there are essentially two tracks for developing a CISF site. The original deal between private companies and DOE established that DOE would be responsible for waste privately produced and would remove waste and take title to the waste only once it leaves the original site. Private companies now sue DOE and receive compensation from the 'judgement fund'. Not all the companies that have SNF are private. Tennessee Valley Authority and a number of southern sites are quasi-governmental.

From San Onofre Coalition final 'Action Report': *"The results of the analysis, from both the Strategic and Conceptual Transportation Plans, point to a clear distinction between pathways that rely on the federal government's long standing contractual and statutory obligation to take title to commercial SNF and remove it from plant sites, versus pathways that do not presume a central federal role. Put simply, a federal solution, or at least one that encompasses a significant degree of federal support, offers the surest and most achievable path to relocating the SONGS SNF. All other alternatives create uncertain but potentially large risks and costs and thus are far less likely to meet the test of commercial reasonableness, which encompasses critical considerations of cost, cost recovery, title and liability. The steps outlined in this Plan thus reflect an emphasis on federal action as the key to resolving the core SNF management challenges facing SONGS."*

FEDERAL COMPENSATION FOR HOST COMMUNITIES

The committee is studying whether the state should be advocating for compensation/support for the local community and the definition of 'impacted' or 'host' community.

The committee explored the current tax agreement with Northstar that has assured Vernon is receiving the same level of support as when the VY was operating and learned that Northstar is including its payments to the town when it sues for compensation from the Federal Government's judgment fund for not removing SNF. Companies sue the DOE/Feds for breach of that legal obligation from that fund.

The committee knows about new taxation of ISFSI being promoted by Harrison New York and the Indian Point decommissioning plans, a speaker may be invited.

TOWN OF VERNON STATEMENT

Maddy Arms read a statement she elicited from the town of Vernon at the August 2021 committee meeting:

This statement is the formal position taken by the Town of Vernon Selectboard representing the citizens of the Town:

The Federal Government has not performed its own mandate, to assume ownership and storage of spent nuclear fuel. Thus, the current licensee, NorthStar, will monitor and maintain the Vermont Yankee ISFSI [Independent Spent Fuel Storage Installation] until the Federal Government sites a repository or repositories and starts meeting its obligations.

The Town of Vernon understands and acknowledges the responsibility and the risk of housing the fuel until an approved repository or repositories is selected and the fuel can be transported off site. The Town of Vernon supports a repository site or sites under the following conditions:

1. Approval by the Federal Government, DOE [US Department of Energy], Congress and the NRC [Nuclear Regulatory Commission].
2. Deemed / tested safe by engineering and environmental experts by known and reasonable standards.
3. Received approval and consent from the state, territory, town, or country chosen to be the repository or repositories. This includes one single repository, multiple repositories, or interim storage.

OTHER HOST COMMUNITY ADVOCACY / ORGANIZING

An early goal of the Committee was to gather information on what other nuclear host communities are doing, and more focus will be paid to that question in the months to come to see if Vermont could benefit from working in coalition.

The Nuclear Waste Strategy Coalition (NWSD-- Vermont's PUC and DPS are still listed as members as of 9/10/21) backs completion of Yucca mountain's environmental assessment by the NRC and backs CISF. That group was formed in 1993, by MI, MN, FL utility commissions. Executive Director Katrina McMurrian's presentation on the history of nuclear waste is shared on the NDCAP page. She described the Coalition's pov: "We want to move ahead with licensing of Yucca...We want scientific work of NRC to be completed and gotten to a sound decision to move forward or not, which is up to the NRC." McMurrian said she was unaware of the Western Shoshone claims on Yucca land. In 2021, the NWSD requested that DOE develop and manage an office devoted to integrated nuclear waste storage, transportation, and disposal, a concept that the BRC in 2021 also supported as a separate cabinet level agency.

The Decommissioning Plant Coalition (DPC) was established in 2001 to ensure a coordinated focus on legislative and regulatory issues unique to what was then a relatively small number of plants. According to 2019 testimony from Wayne Norton, Steering Committee President & CEO of Yankee Atomic Electric Company, the permanently shutdown plants now represented by the DPC include: Connecticut Yankee (CT), Crystal River (FL), Duane Arnold (IA), Humboldt Bay (CA), Kewaunee (WI), LaCrosse (WI), Maine Yankee (ME), Pilgrim (MA), Rancho Seco (CA), San Onofre (CA), Vermont Yankee (VT), Yankee

Rowe (MA), and Zion (IL). But a recent search for its website found just a page from a lobbying firm, Governmental Strategies Incorporated, that says “members commenting on this matter include the Connecticut Yankee (CT), LaCrosse (WI), Maine Yankee (ME), Rancho Seco (CA), and Yankee Rowe (MA), facilities.” The DPC, through Wayne Norton as spokesperson, has repeatedly called out the need for urgent action by Congress to establish an integrated national nuclear waste program. Like the Nuclear Waste Strategy Coalition to which it belongs, DPC says continued Congressional inaction is now costing American taxpayers \$2.2 million dollars a day from the Judgment Fund and calls for access to the Nuclear Waste Fund unimpeded by Congressional appropriations (ie, a new entity with access to the funds collected for permanent disposal).

Southern California Edison, along with the counties of Orange and San Diego, in 2017 announced a new coalition to catalyze action on the critical issue of off-site spent fuel storage and disposal. SCE's Experts Team is chaired by Tom Isaacs, former director, Department of Energy Office of Nuclear Waste Policy, and includes former Nuclear Regulatory Commission chairman Allison Macfarlane, both of whom have expertise in spent fuel siting and licensing. In March 2021 they produced a framework for relocating the spent nuclear fuel now stored literally on the oceanfront captured in a three-volume set of plans which the Committee will analyze. SCE and the towns announced the formation of a stakeholder coalition, Action for Spent Fuel Solutions Now, to build momentum toward commercially reasonable off-site storage or disposal solutions and to urge the federal government to meet its legal obligations. One action they's taken is to write a letter to DOE Secretary Granholm supporting a consensus-based approach to siting one or more consolidated interim storage (CIS) facilities and permanent repositories.

The committee is also exploring how Lacey Township in Ocean County New Jersey Oyster Creek entered into a decommissioning agreement with Holtec that included the town's political advocacy for Holtec's proposed CISF facility in New Mexico

FINDING ECONOMIC INFORMATION ON CISF VERSUS ON-SITE STORAGE UNTIL PERMANENT GEOLOGIC FACILITY IS FOUND

The Committee has explored the whether a cost/benefit analysis of CISF plan versus keeping waste in place. Private groups around Indian Point have reportedly been exploring commissioning such a study. Queries to our federal delegation indicate no such federal study has been undertaken but that it is something that could (and possibly should) be requested.

POTENTIAL FUTURE TOPICS OF DISCUSSION/SPEAKERS

The October meeting will include NRC representatives who can discuss CISF licensing and Yucca Mountain status and or developments for a new geologic disposal facility.

Deep Isolation, a company investing in alternatives to deep geologic repositories. Has created a series of podcasts on nuclear waste that are very good:

San Onofre Action Coalition.

Decommissioning Plant Coalition Wayne Norton

Holtec Representative

Sarah Hoffman, former PUC Commissioner, former head of Nuclear Waste Strategy Coalition and NDCAP precursor VSNAP. We have requested her input several times but have been unable to secure a commitment to address the Committee.

Analyze longevity of current ISFSI if it remains for 50 years, 100 years - should flooding, 'hardening' storage, double casking be considered?

Update on WIPP - Waste Isolation Pilot Project for defense waste in Carlsbad, New Mexico -- which was closed for a couple of years after human error led to an explosion. This facility was meant to showcase feasibility of deep geologic repository. It received support from the NM state under the regulatory framework of EPA, not NRC.

Keep analyzing what other countries are doing. We learned that no country has an operating deep geologic repository at this time but that Finland's Onkalo facility, which has been under construction for the last 25 years or more, may officially begin receiving waste soon.

Clarify criteria for the reimbursement of costs from the Nuclear Waste Fund and/or Judgment Fund necessary for any consolidated spent fuel storage. For instance, should the fund allow reimbursement for all aspects of transportation (including indemnification as would be provided were DOE to contract for SNF shipments) and storage costs at alternate site(s)?

Though not generally within the purview of this Committee, we are still awaiting guidance from the NRC on the parameters of space to be available for future VY development. The ISFSI occupies two and a half acres of the 143 acre site, but will have a much larger perimeter, at least 100 meters all around, then adding a radiological dose component perimeter to that owner-controlled area. Rail and truck access will also take up a big piece of that exclusion area. The town of Vernon has been engaging in these explorations and it may be helpful for the Committee to keep apprised of those plans/hopes.

MORE QUESTIONS TO BE EXPLORED:

Central question: Should YUCCA be supported or taken off the table? Is it an enigma that prevents anybody from getting a solution? Should the panel ask that a new deep geologic facility be explored before action on an 'interim' site occurs? Should the panel back NWSC's call for the licensing process to be continued through its conclusion yay or nay before the Atomic Safety and Licensing Board?

Should an independent agency, as BRC and others have argued, for integrated waste management be supported and why? What are the problems inherent in such an agency operating within the DOE itself?

Should more nuclear power be produced if we have no practical solution to the problem of where to store the waste, especially since the court stopped collection of generating tax for the nuclear waste fund?

Thirteen states currently have restrictions on new nuclear power production, usually a popular vote in support. But six of those states -- California, Connecticut, Illinois, Maine, Oregon and West Virginia --

require by statute the identification of a demonstrable technology or a means for high level waste disposal or reprocessing before any new nuclear energy producing facility can be considered. See the Council of State Governments website:

<https://www.ncsl.org/research/environment-and-natural-resources/states-restrictions-on-new-nuclear-power-facility.aspx>.

Should congress do a cost/benefit analysis of interim storage vs. HOSS scenario of onsite management for the next decades?

Should the committee explore the possibility of a new nuclear reactor on the VY site. A small modular reactor was discussed to be showcased on several old reactor properties.

Nuclear Waste Fund -- should a change in law allow NWF to be used for interim or other purposes?

DRAFT POSSIBILITIES FOR POTENTIAL NDCAP SUPPORT TO BE DISCUSSED AT FUTURE MEETINGS

Recognize tribal rights and consistent lack of consent on part of the state of Nevada since 1989 and call on DOE to abandon Yucca Mountain and begin work on locating a new geologic repository.

Support creation of a new DOE agency, or a new independent agency, that would restart the siting process and fully integrate a targeted waste management program as recommended by the BRC, the nuclear industry and others.

Officially, as a state, join the Nuclear Waste Strategy Coalition (work with others supporting Yucca completion and CSIF) or formally withdraw as June Tierney has indicated DPS would.

Call for an Economic Impact Study from the General Accounting Office and/or Congressional Research Service comparing solutions paths.

Call on the governor and state to take action at the Council of State governments to call a national convention of affected host communities in 2022 on nuclear waste and use NDCAP funds to participate in expressing strong political will/support for a solution now.

Ask Congress to provide Nuclear Waste Fund (NWF) money to allow HOSS compliant CIS facilities to be built at VY and other closed reactors, and / or restart the collection of monies for the fund (cut off by court in 2013) from ratepayers who are still receiving power from nuclear plants. Fairness dictates charging those customers who are using nuclear energy today rather than putting on the back of future generations.

Call upon Peter Welch to join the new Nuclear Waste Caucus in the House and for our federal delegation overall to support whatever actions the Panel deems needed.

Support the concept of not wasting funds / time on 'interim' solutions, focus all energy on a permanent repository and let a new siting process begin.

Support interim storage for places where spent fuel simply cannot be safely stored, like on the ocean at San Onofre.

Support a viable formula for host community federal compensation while the ISFSI remains at VY.

Ask Congress to provide Nuclear Waste Fund (NWF) money to allow HOSS compliant CIS facilities to be built at VY and other closed reactors, and restart the collection from ratepayers who are still receiving power from nuclear plants. It is a matter of fairness to charge those customers who are using nuclear energy today rather than putting it on the back of future generations.

Engaging in an analysis of ISFSI viability over the next 50 years recognizing that not much may be done at the federal level before then, which means analyzing the VY ISFSI according to the HOSS principles outlined by the Sierra Club, Union of Concerned Scientists, etc.

END

Appendix A

**Organizations that Have Attended One or More
VT NDCAP Federal Nuclear Waste Policy Committee Meetings
(through 8/23/2021)**

Organization Type

Organization Name

Nuclear Lobby Organizations

Nuclear Energy Institute
Nuclear Public Outreach
Nuclear Waste Strategy Coalition

Anti-Nuclear Organizations

Citizens Awareness Network
New England Coalition
Vermont Yankee Decommissioning Alliance
Promote Andrews (Andrews County, TX)

Out-of-State

Government Agencies

Nuclear Regulatory Commission (Region 1 Office)
US Department of Energy (DOE):
 DOE Headquarters
 Argonne National Laboratory
 Pacific Northwest National Laboratory
New Jersey Department of Environmental Protection

News / Media Outlets

Brattleboro Reformer
Exchange Monitor (an Engineering Periodical)
WAMC Radio (NPR Albany, NY)
WPTZ (Burlington TV 5)
WVNY (Plattsburgh - Burlington TV 22)

